11 ALTERATIONS, OBLITERATIONS & ERASURES EXAMS

11.1 Objective

To detect alterations to documents, and to decipher those entries which have been altered, obliterated, or erased.

11.2 References

- Conway, James V.P.; Evidential Documents; Charles C. Thomas Publisher, 1959
- Harrison, Wilson R.; Suspect Documents (Second Edition); Sweet & Maxwell Ltd., 1966
- Ellen, David; The Scientific Examination of Documents (Second Edition); Taylor & Francis Ltd., 1997
- Hilton, Ordway; Scientific Examination of Questioned Documents (Revised Edition); Elsevier, 1982
- Saferstein, Richard; Criminalistics, An Introduction to Forensic Science; Prentice-Hall Inc., 1977
- Hilton, Ordway; Detecting and Deciphering Erased Pencil Writing; Charles C. Thomas Publisher, 1991
- Brunelle, Richard L. & Reed, Robert W.; Forensic Examination of Ink and Paper; Charles C. Thomas Publisher, 1984
- Foster & Freeman Ltd.; Instruction Manual for the Electrostatic Detection Apparatus (ESDA)
- Richards, G.B., "The Application of Electronic Video Techniques to Infrared and Ultraviolet Examinations, JFS, Vol. 22, No. 1, 1977

11.3 Equipment

- Stereo microscope
- Magnifier
- Light source of appropriate design for oblique lighting capability
- VSC-2000 Video Spectral Comparator
- DOYA IR Video Analyzer
- UV light source
- Transmitted light box
- ESDA
- Typewriter test grids

11.4 Safety Measures

Precautionary measures specified in Section 1.3 when working with a UV light source. Precautionary measures due to the high voltage of the ESDA are contained in the Manufacturer's Operating Instructions Manual.

11.5 Procedures

11.5.1 The procedures outlined below may not be possible or necessary in every case. The order of procedures may also vary depending on the case. The nature of these type problems varies widely, and as a result the procedures appropriate to a given case will vary. What follows is a list of techniques commonly applied to this category of examination.

11.5.2 The procedures set forth in Section 10 of this Manual (Ink Examinations) may be applicable to this type of problem, and should be reviewed if necessary.

11.5.3 Examine document(s) for any evidence of alteration (e.g. paper fiber disturbance, overwriting, opaquing fluid). Useful instruments might include microscope, side light, transmitted light box, ESDA, iodine-fuming capsules, erasure detection powders, and typewriter test grids.

11.5.4 Compare the basic physical properties of the written entries, such as color and type (e.g. pencil, ballpoint or non-ballpoint). Evaluate the significance of any similarities or differences. If the entries are machine produced, establish the process used (e.g. typewriter).

11.5.5 Determine whether the type (class) of writing instrument is consistent throughout the written entries. If machine produced, determine if there is consistency throughout, or whether there is evidence of a second machine (e.g. difference in font, spacing, process).

11.5.6 Determine whether any writing instrument individualities (e.g. burr striation defects, nib characteristics) are present, and whether they are consistent throughout the written entries. Evaluate the significance. If machine produced, determine the consistency of any defects or abnormalities.

11.5.7 Examine with long and short wave UV light, and evaluate the significance of the results.

11.5.8 Examine with the VSC-2000. Evaluate the significance of results in the IR absorbance, reflectance and luminescent properties; as well as those detected utilizing the UV light source. (**Note:** DOYA IR Analyzer may also be used, especially in cases where the size or shape of the documents is such that the open architecture of the DOYA is necessary. Although there will undoubtedly be situations where either instrument will provide adequate results, the VSC-2000 has a broader range of capabilities, and for this reason should be the initial instrument of choice. Altered, obliterated, or erased entries which cannot be deciphered on the DOYA shall be examined with the VSC-2000 (if possible) before reporting any conclusions on a CoA.)

11.5.9 Examine with laser or other type of alternate light source in conjunction with various filters (if available).

11.5.10 If possible, prepare a permanent record (photograph or similar type reproduction) of any significant results obtained.

11.5.11 If the obliteration involved the use of an opaquing fluid such as ‘wite-out’, and the original entry is not readily observable from the reverse side, solvents such as petroleum ether or ‘Liquid Window’ can be used to render the paper momentarily transparent so that the original entry can be observed.

11.5.11.1 Complete removal of the opaquing fluid by abrasion or through the use of solvents (e.g. ‘Turpentine’) may be possible, but this is considered a destructive process, and should not be performed without the permission of the submitter or Commonwealth Attorney. Record photographs (or similar type reproduction) should be prepared prior to the initiation of any destructive process.

11.5.12 Consider the significance of observations in 11.5.2 through 11.5.11.1, both individually and in combination, and form a conclusion.

11.5.13 The need for other types of destructive exams such as thin layer chromatography (TLC) or high pressure liquid chromatography (HPLC) will generally be referred to the Trace Evidence Section.

◆End